

CENTER FOR ADVANCED STRUCTURAL COMPOSITES

CENTER

The Center for Advanced Structural Composites was first funded in 1998 to develop the commercial potential of fiber reinforced composites by improving the strength, stiffness, damping, and acoustical performance of structures manufactured using advanced composite materials.

TECHNOLOGY

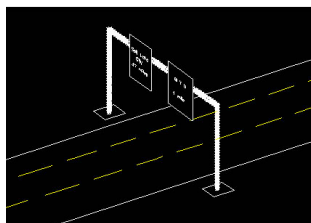
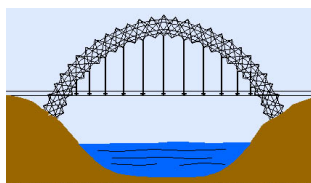
The core technologies consist of an ultra-lightweight composite structural shape known as the “**IsoTruss**” and a damping enhanced **wavy composite material** system. The **wavy composite material** utilizes carbon fibers layered in sinusoidal patterns on laminated material to enhance acoustic damping characteristics without compromising strength or stiffness. The **IsoTruss** structure is made of carbonfibres wound in a complex geometric pattern and stabilized through an epoxy cure cycle. The resulting lightweight structure exhibits extreme rigidity and torsional strength. The technology has the potential for various functional applications including aerospace, automotive, support towers, heavy construction support members, and preformed concrete beams.

ACCOMPLISHMENTS

A new business, **Patterned Fiber Composites, Inc.**, has been established with license rights to produce products using the damped wavy composite technology. The company has been awarded a \$950,000 Phase II SBIR contract from the USAF to commercialize the technology. With the licensing of this technology, the Center focus has moved primarily to the IsoTruss technology. The Center is working with several industrial partners to develop a variety of new products using the IsoTruss technology. Contemplated applications include lightweight bicycle frames, freeway sign supports, tilt-up wall braces for construction, and powerline support towers.

CONTACT

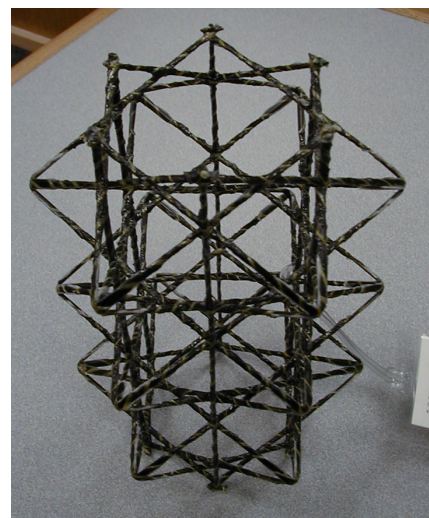
Director: David W. Jensen, Ph.D.
Brigham Young University, Provo, Utah
Phone 801-378-2094, Fax 801-378-4449
david@byu.edu
<http://www.et.byu.edu/~casc/>



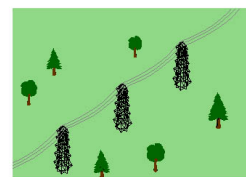
Can You I imagine...

... a powerline transmission tower that can withstand extreme wind conditions, support tremendously heavy loads, is corrosion free, unaffected by temperature extremes, and weighs significantly less than conventional steel towers.

THE CENTER DEVELOPS FIBER REINFORCED COMPOSITE MATERIALS AND STRUCTURAL DESIGNS THAT ARE LIGHTWEIGHT, STRUCTURALLY RIGID, AND EXTREMELY STRONG.



* An example of the IsoTruss structure that provides extreme rigidity and torsional strength in a very lightweight configuration.



Some anticipated applications for the IsoTruss

technology.